

REMARKS

Applicant has carefully reviewed and considered the Office Action mailed on January 2, 2003, and the references cited therewith.

Claims 17, 21, 26, and 31 have been amended. Claims 19 and 28 have been canceled without prejudice. No claims are added by way of this amendment. Claims 1-16, 20, 24-25, 29-30, and 34 were previously canceled. As a result, claims 17-18, 21-23, 26-27, 31-33, and 35-46 are pending in this application.

Drawings as Filed

To date, Applicant has not received an indication from the Examiner as to whether the drawings originally filed are acceptable. Applicant respectfully requests an indication in the next official communication from the Examiner.

Amendments to the Specification

The paragraph beginning on page 7, line 26, has been amended by inserting a sentence stating that in an embodiment layers 121-123 are contiguous, i.e. touching. Support may be found, for example, in FIG. 3.

The paragraph beginning on page 8, line 8 has been amended by inserting “directly” after “formed”. Support may be found, for example, in FIG. 3.

No new matter has been added by way of these amendments to the specification.

Amendments to Claims 17, 21, 26, and 31

Independent claim 17 has been amended by adding “wherein the film comprises a plurality of contiguous layers, selected ones of which comprise a plurality of traces”. Support may be found, for example, in FIG. 3; in the paragraph beginning on page 7, line 26, as amended; in the paragraph beginning on page 8, line 24; and in original claim 19.

Independent claim 21 has been amended by inserting “a flexible,” before “electrically”, and by inserting “formed directly upon a surface of the film and” after “lands”. Support may be found, for example, in FIG. 3; in the paragraph beginning on page 7, line 26, as amended; and in the paragraph beginning on page 8, line 8, as amended.

Independent claim 26 has been amended by inserting “formed directly upon a surface of the film and” after “lands”, and by adding “wherein the film comprises a plurality of contiguous layers, selected ones of which comprise a plurality of traces”. Support may be found, for example, in FIG. 3; in the paragraph beginning on page 7, line 26, as amended; in the paragraph beginning on page 8, line 8, as amended; in the paragraph beginning on page 8, line 24; and in original claim 19.

Independent claims 31 has been amended by inserting “formed directly upon a surface of the film and” after “lands”. Support may be found, for example, in FIG. 3; in the paragraph beginning on page 7, line 26, as amended; and in the paragraph beginning on page 8, line 8, as amended.

No new matter has been introduced by way of the amendments to the claims.

Rejection of Claims 17-19
Under 35 U.S.C. §102(b)
As Anticipated by Behlen

Claims 17-19 were rejected under 35 USC § 102(b) as being anticipated by Behlen et al. (U.S. Patent No. 5,598,033). Claim 19 has been canceled.

Behlen discloses a flexible micro BGA stack that includes a flexible interposer 312 (FIG. 3) having a main portion 312a and an extension 312b. The interposer 312 has a compliant layer 340 and a flexible layer 338. The flexible layer 338 has a plurality of lands or “central terminals” 348. A die 310 is electrically connected to the central terminals 348 of main portion 312a by means of wires 356 (see column 4, lines 31-34). Solder bumps 314 are connected to the central terminals 348 in a BGA arrangement. Solder bumps 314 are for connecting either to corresponding lands 326 of an adjacent interposer, or to corresponding contact pads on a substrate. Traces T1-T4 (FIG. 6) electrically connect solder bumps 314 on the main portion 312a with corresponding lands 326 of the extension 312b (see column 5, line 62 through column 6, line 21).

Behlen does not disclose all of the claim limitations recited in independent claim 17, as amended. For example, Behlen does not appear to disclose *inter alia* a film comprising a plurality of contiguous layers, because in Behlen just a single flexible layer 338 (FIG. 3) is disclosed. In FIGS. 4 and 6 of Behlen, the flexible layers do not touch one another.

AMENDMENT AND RESPONSE UNDER 37 CFR §1.116 – EXPEDITED PROCEDURE

Serial Number: 09/893,036

Filing Date: June 27, 2001

Title: FLEXIBLE TAPE ELECTRONICS PACKAGING

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For the above reasons, claim 17 should be found to be allowable over Behlen, and Applicant respectfully requests that the rejection of claim 17 under 35 U.S.C. §102(b) as anticipated by Behlen be withdrawn.

Claim 18, which depends directly from claim 17 and incorporates all of the limitations therein, is also asserted to be allowable for the reasons presented above.

Rejection of Claims 21-23 and 41-42
Under 35 U.S.C. §103(a)
As Unpatentable over Fukuoka

Claims 21-23 and 41-42 were rejected under 35 USC §103(a) as being unpatentable over Fukuoka (U.S. Patent No. 5,818,699).

Fukuoka discloses a multi-chip module 150 (FIG. 3) having a thin film 151 formed over a ceramic substrate 101. In FIG. 3 of Fukuoka, thin film 151 is shown to include two layers, and each layer contains wiring circuits and vias. One or more IC's 102 are mounted on mounting pads 105 on the upper surface of thin film 151.

Regarding independent claim 21, Fukuoka fails to teach or suggest all of the claim limitations present in independent claim 21, as amended, so a *prima facie* case of obviousness has not been established. For example, Fukuoka does not appear to disclose *inter alia* using a flexible film. The thin film 151 of Fukuoka is formed over the surface of the ceramic substrate 101 (see column 15, lines 41-44), and it therefore is not flexible.

For the above reasons, claim 21 should be found to be allowable over Fukuoka, and Applicant respectfully requests that the rejection of claim 21 under 35 U.S.C. §103(a) as being unpatentable over Fukuoka should be withdrawn.

Claims 22-23 and 41-42, which depend directly or indirectly from claim 21 and incorporate all of the limitations therein, are also asserted to be allowable for the reasons presented above.

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Rejection of Claims 26-28
Under 35 U.S.C. §103(a)
As Unpatentable over Behlen

Claims 26-28 were rejected under 35 USC §103(a) as being unpatentable over Behlen.

Claim 28 has been canceled.

Behlen was discussed above.

Regarding independent claim 26, Behlen fails to teach or suggest all of the claim limitations present in independent claim 26, as amended, so a *prima facie* case of obviousness has not been established. For example, Behlen does not appear to disclose *inter alia* a film comprising a plurality of contiguous layers, because in Behlen a single flexible layer 338 (FIG. 3) is disclosed. In FIGS. 4 and 6 of Behlen, the flexible layers do not touch one another. Nor does Behlen appear to disclose *inter alia* a plurality of lands formed directly upon a surface of the film, because in Behlen the lands 326 (FIG. 3) are formed on compliant layer 340 and not directly on flexible layer 338.

For the above reasons, claim 26 should be found to be allowable over Behlen, and Applicant respectfully requests that the rejection of claim 26 under 35 U.S.C. §103(a) as being unpatentable over Behlen should be withdrawn.

Claim 27, which depends from claim 26 and incorporates all of the limitations therein, is also asserted to be allowable for the reasons presented above.

Rejection of Claims 31-33
Under 35 U.S.C. §103(a)
As Unpatentable over Fukuoka
in view of Reinschmidt

Claims 31-33 were rejected under 35 USC §103(a) as being unpatentable over Fukuoka in view of Reinschmidt (U.S. Patent No. 5,832,294).

Fukuoka was discussed above.

Reinschmidt discloses a dual-microprocessor module 1 (FIG. 1A).

Regarding independent claim 31, the asserted combination of Fukuoka in view of Reinschmidt fails to teach or suggest all of the claim limitations present in independent claim 26,

as amended, so a *prima facie* case of obviousness has not been established. For example, neither Fukuoka or Reinschmidt appear to disclose *inter alia* a thin, flexible, electrically insulating film. The thin film 151 of Fukuoka is formed over the surface of the ceramic substrate 101 (see column 15, lines 41-44), and it therefore is not flexible.

For the above reasons, claim 31 should be found to be allowable over any combination of Fukuoka and Reinschmidt, and Applicant respectfully requests that the rejection of claim 31 under 35 U.S.C. §103(a) as being unpatentable over Fukuoka in view of Reinschmidt should be withdrawn.

Claims 32-23, which depend from claim 31 and incorporate all of the limitations therein, are also asserted to be allowable for the reasons presented above.

Allowable Subject Matter

Applicant notes with appreciation that claims 37-40 were allowed.

Claims 35-36, 43-44, and 45-46 were objected to as being dependent upon a rejected base claim, but they were indicated to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Because independent claims 17, 26, and 31, as amended, are asserted by Applicant to be allowable for the reasons presented above, claims 35-36, 43-44, and 45-46, which depend directly or indirectly from independent claims 17, 26, and 31, and incorporate all of the limitations therein, are also asserted to be allowable for the reasons presented above.

Additional Elements and Limitations

Applicant considers additional elements and limitations of the rejected claims 17-18, 21-23, 26-27, 31-33, and 41-42 to further distinguish over the cited references, and Applicant reserves the right to present arguments to this effect at a later date.

Documents Cited But Not Relied Upon For This Office Action

Applicant need not respond to the assertion of pertinence stated for the references cited but not relied upon by the Office Action, because these references are not made part of the

rejections in this Office Action. Applicant is expressly not admitting to this assertion and reserves the right to address the assertion should it form part of future rejections.

Conclusion

Applicant respectfully submits that claims 17-18, 21-23, 26-27, 31-33, and 35-46 are in condition for allowance, and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney Walter W. Nielsen at 602-298-8920 or the below signed attorney to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

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Date March 3, 2003

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Box AF, Commissioner of Patents, Washington, D.C. 20231, on this 3rd day of March, 2003.

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